

Borehole

**22-03-06**

Log Event A

**Borehole Information**

Farm : <u>BY</u>	Tank : <u>BY-103</u>	Site Number : <u>299-E33-210</u>
N-Coord : <u>46,056</u>	W-Coord : <u>53,244</u>	TOC Elevation : <u>648.00</u>
Water Level, ft :	Date Drilled : <u>12/22/1972</u>	

**Casing Record**

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

**Borehole Notes:**

The borehole was drilled with a cable tool drilling rig, and the casing is apparently ungrouted and unperforated.

**Equipment Information**

Logging System : <u>1</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	Logging Procedure : <u>P-GJPO-1783</u>

**Log Run Information**

Log Run Number : <u>1</u>	Log Run Date : <u>8/9/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>21.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>2</u>	Log Run Date : <u>8/11/1995</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>100.4</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>20.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Spectral Gamma-Ray Borehole  
Log Data Report

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Borehole

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### Analysis Information

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Analyst : D.C. Stromswold

Data Processing Reference : P-GJPO-1787

Analysis Date : 1/19/1996

#### Analysis Notes :

Verification spectra collected before and after the log runs showed that the logging tool was operating properly.

Gain drift during run 1 required two energy calibrations to maintain proper peak identification during data analysis. Gain drift during run 2 was minimal, enabling a single energy calibration to be used.

Repeatability at the overlap logging section was within the statistical uncertainties.

Correction factors for 0.33-in.-thick steel casing were used during data processing, because correction factors for 0.31-in. casing were not available. As a result, the calculated concentrations will be slightly high. No water correction was applied because the borehole was dry.

Cs-137, Co-60 and Sb-125 were the man-made contaminants detected in this borehole. Cs-137 was detected almost continuously from the surface to about 58 ft, and discontinuously below this depth to total depth (TD). Co-60 was detected near 45 ft and also discontinuously below this depth, with frequent occurrences from 76 ft to TD. Sb-125 was detected mainly near 45 ft.

K-40 concentrations increase below about 48 ft, which is the depth of the tank's bottom.

See the Tank Summary Data Report for BY-103 for additional log analysis.

#### Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Westinghouse Hanford Company (WHC) Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data from WHC with no attempt to adjust the depths to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.